Traffic Management Division

Accomplishments and Needs Report

Report to the Utah Transportation Commission

December 6, 2013

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Director of Traffic Management

Final Four Strategic Goals
Focus of the Traffic Management Division

1. **Preserve Infrastructure**

   - Monitor & maintain our devices / equipment

2. **Optimize Mobility**

   - Optimize signal timing and maintenance
   - Manage traffic flow (ramp meters, incidents, etc.)
   - Influence travel patterns with traveler information

3. **Zero Fatalities**

   - Warn of dangerous situations (weather, construction, incidents)
   - Coordinate with Public Safety / local law enforcement

4. **Strengthen the Economy**

   - Facilitate efficient movement of goods and services

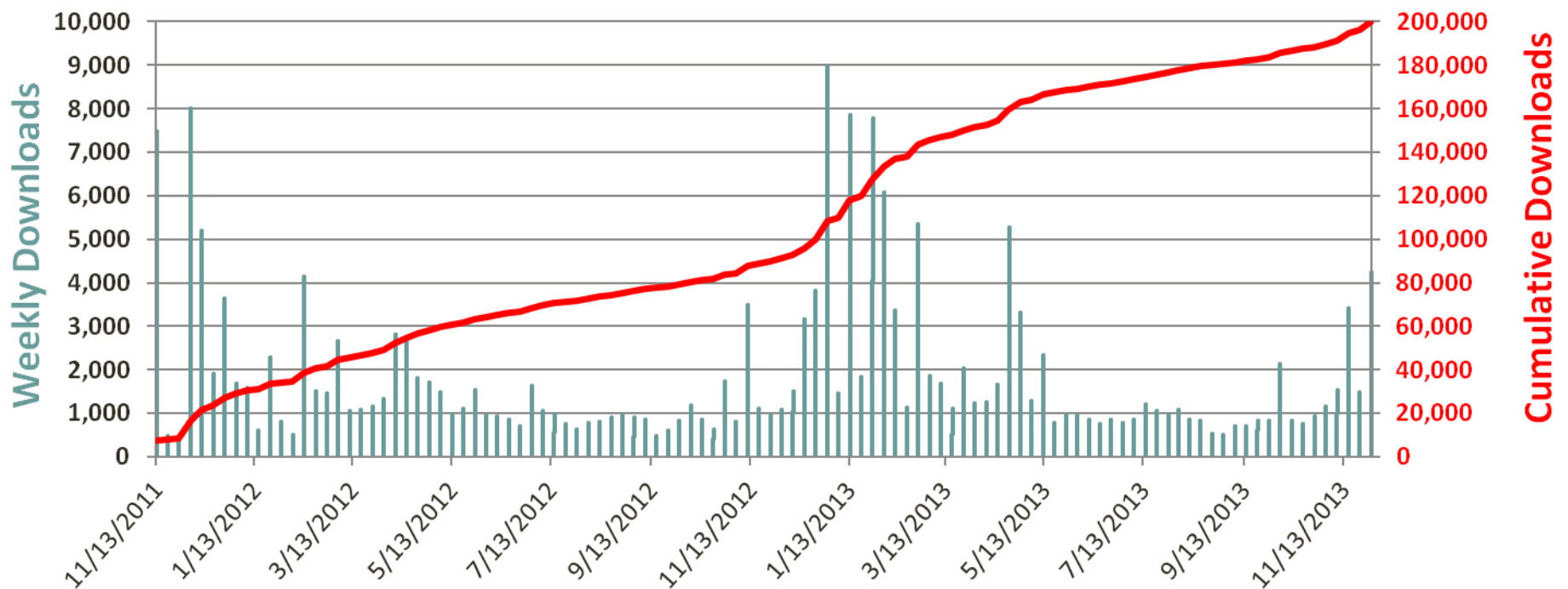# Traffic Management Division
Selected 2013 Accomplishments

1. Improved Traveler Information

2. Strategic ATMS expansion

3. Traffic operations expertise provided for key Region projects

4. Traffic Signal Program: Transition to World Class

Improved Traveler Information
UDOT Traffic Mobile App

UDOT Traffic Mobile App Downloads

Improved Traveler Information
Little Cottonwood Canyon Communications Tool

Project Goal: To provide consistent and timely Little Cottonwood Canyon traveler information from the Town of Alta, Unified Police Dept, Utah Avalanche Center, and UDOT (avalanche control, UDOT Traffic, maintenance shed).

- UDOT-built tool to serve all public partners within LCC
- Housed at Alta dispatch
- Over 120 messages sent in the first year.

Improved Traveler Information
Little Cottonwood Canyon Communications Tool

BEFORE:

Tweet from @UPDCanyonAlerts –
Road Closed at 9am (Posted at 8:15am)

Tweet from @TownofAlta –
Road Closed at 8am (Posted at 7:30am)

Tweet from @UtahAvalancheCenter –
Road Closed at 8am (Posted at 7:45am)

Message to Canyon Users from @UDOTAvy –
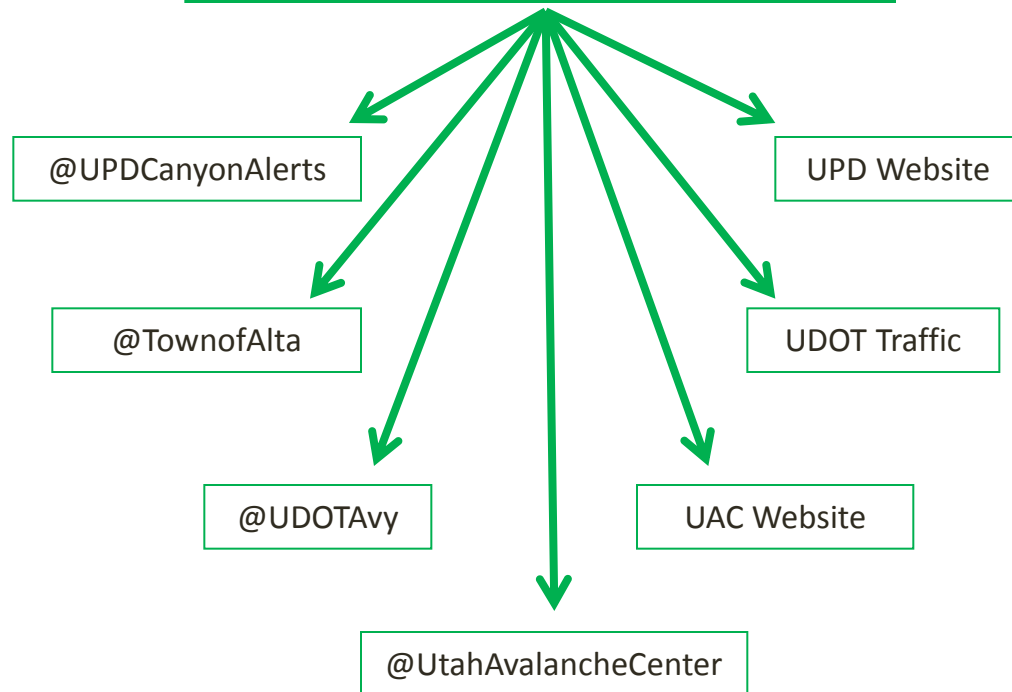Road Closed at 8:30am (Posted at 8am)

UPD Canyon Alerts Website –
Updated at 9:45am

Utah Avalanche Center Website –
Not updated for this closure because of a lack of consistent information

UDOT Avalanche Website –
Not updated for this closure due to time/resource constraints

AFTER:

Message received at Alta Dispatch:
SR-210 CLOSED AT 8AM FOR AVALANCHE CONTROL WORK. EXPECTED TO REOPEN AT 8:45AM.

@UPDCanyonAlerts

UPD Website

@TownofAlta

UDOT Traffic

@UDOTAvy

UAC Website

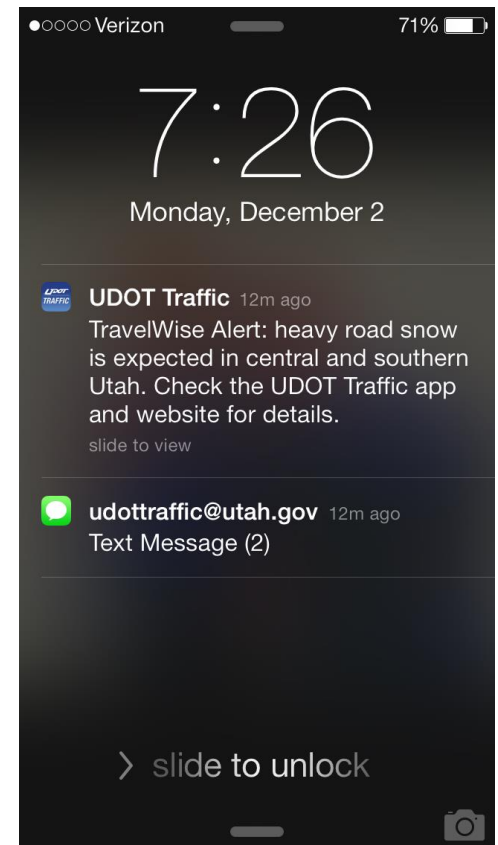@UtahAvalancheCenter

udot.utah.gov

Improved Traveler Information:
Travelwise Alerts

Program Goal: To alert the traveling public of large, impactful events via push-alerts through the UDOT Traffic app.

Used For:

- Extreme weather events
- Air quality
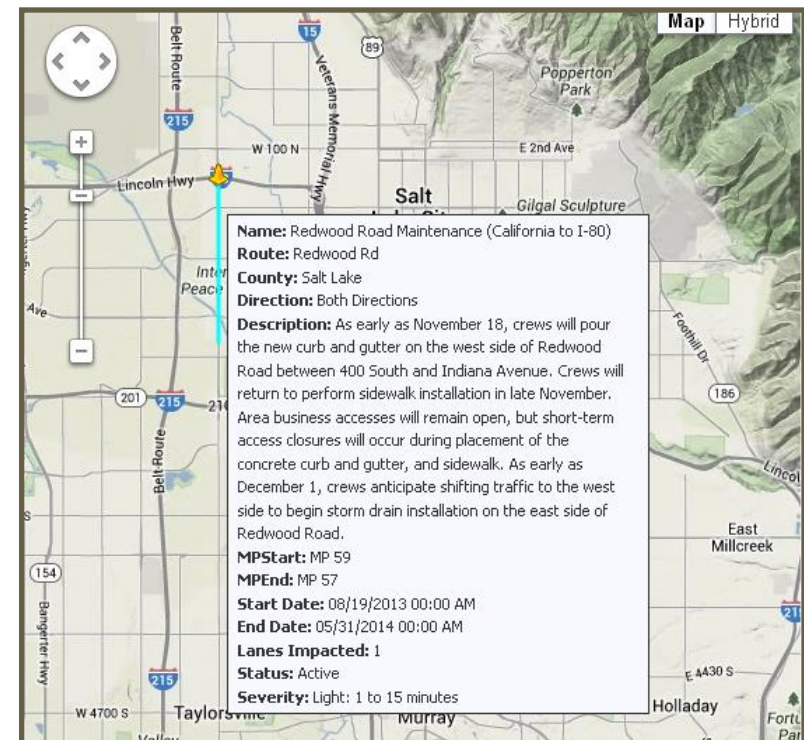- Large special events
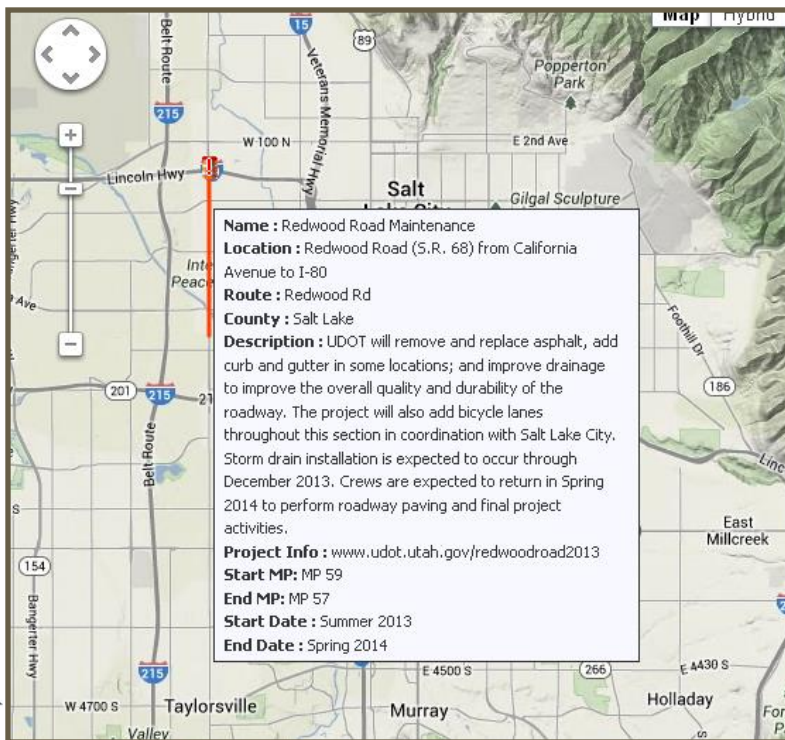- Crashes with Regional impact

Innovation in Traveler Information
UDOT Lane Closure Reporting

Program Goal: To report every lane closure on UDOT roads throughout the state, in advance and in real-time.

- Over 500 projects and over 100 project alerts entered into the Lane Closure reporting system in 2013.
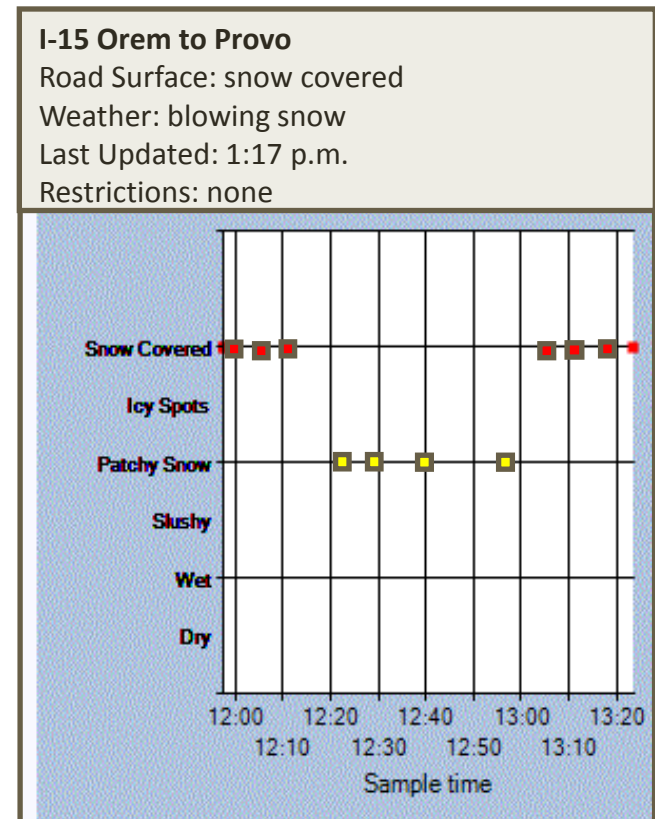
Innovation in Traveler Information
Citizen Reporter Program

Program Goal: To improve the quality and quantity of road weather information given to the public, especially on rural roads.

- One citizen report has the potential to help tens of thousands

I-15 Orem to Provo
Road Surface: snow covered
Weather: blowing snow
Last Updated: 1:17 p.m.
Restrictions: none

Strategic ATMS expansion
Region 1 highlights

Completed

- SR-39, VMS at mouth of Ogden Canyon
- SR-39, Fiber in Ogden Canyon
- I-15 Fiber, Brigham City to SR-30
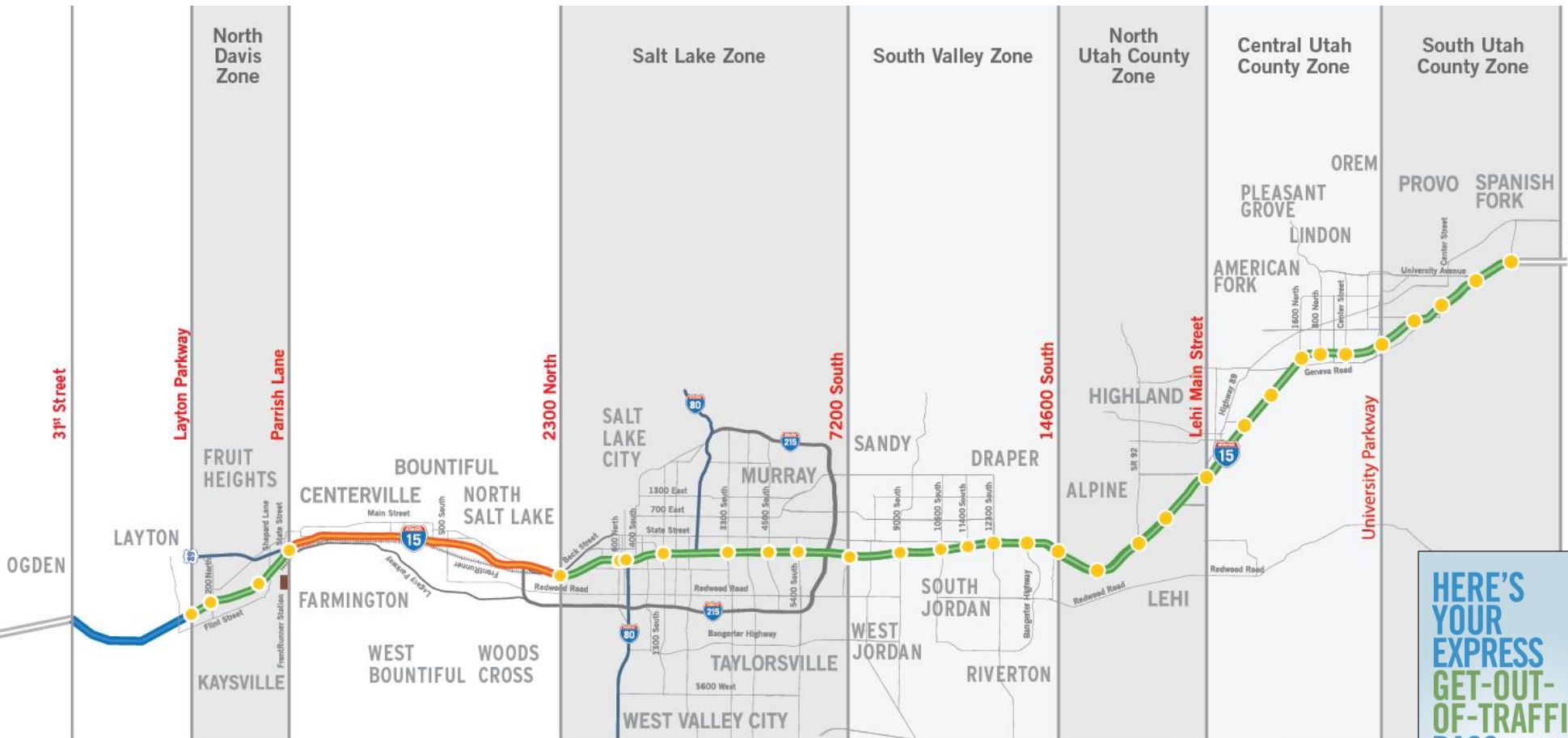- 1 new RWIS, I-84 at Riverdale Rd

Underway

- 56 Signals to be interconnected
- VMS, WB US-89 at Brigham City Main
- I-15 South Davis Express Lanes

Strategic ATMS expansion
Region 1 highlights

System Extension:
- North Salt Lake to Farmington (10 miles)
- Construction begins 2014

Strategic ATMS expansion
Region 2 highlights

Completed

- I-80, Variable Speed Limit in Parley's Canyon
- Big Cottonwood Canyon Fiber, 3 RWIS
- US-40 and SR-248 Fiber
- Mountain View Corridor, 2 RWIS

Underway

- Little Cottonwood Canyon Fiber
- 75 Signals to be interconnected
- Tooele County dispatch integration
- I-80 Wanship / Coalville RWIS and CCTV
- SR-201, 5600 W to I-80 Fiber and CCTV

Strategic ATMS expansion
Region 3 highlights

Completed

- I-15, Payson to Spanish Fork Fiber, Detectors, CCTV, RWIS
- I-15, 7 Audio over IP HAR in Utah County
- University Parkway, State St to 800 East Fiber
- 2 new RWIS, Provo and Orem

Underway

- I-15, VMS NB in Lehi
- Spanish Fork dispatch integration
- US-40, CCTV in Naples, Roosevelt
- Fiber to new Lehi Maintenance shed

Strategic ATMS expansion
Region 4 highlights

Completed

- I-15, Holden to Scipio Fiber, CCTV, HAR
- I-15, Hamilton Fort to Cedar City Fiber
- I-15, South Beaver to North Beaver Fiber
- I-70 Fish Springs Bridge ice warning system
- Brian Head & Beaver Canyon VMS

Underway

- I-15, North Beaver to Manderfield Fiber, VMS, CCTV, RWIS
- I-70 / US-6 / US-191 VMS
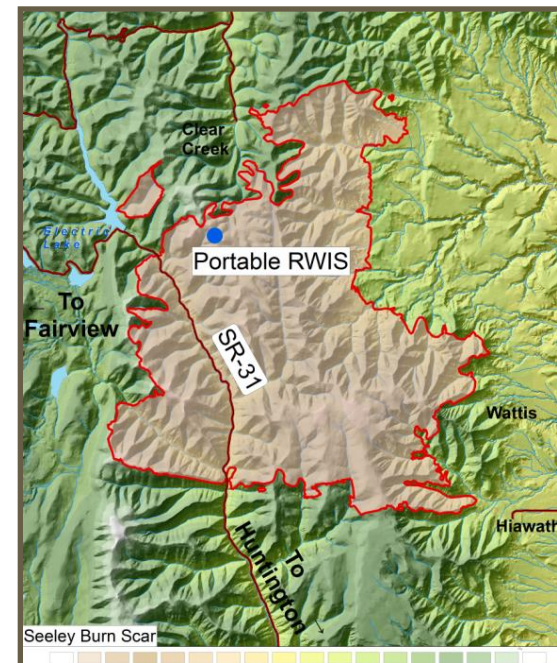- US-6 Fiber
- Lake Powell Ferry VMS (2)

Innovation in ATMS
SR-31 burn scar portable RWIS

Project Goal: Mitigate the threat of debris flows resulting from rainfall over the Seeley Fire burn scar.

- Portable RWIS deployed in watershed above burn scar
- 18 automated warnings
- Warning issued for all six SR-31 closures in 2013
- No injuries or equipment losses in 2013

Innovation in ATMS
Winter Road Weather Index

Project Goal: Create a performance measure that indicates the severity of snow, ice and blowing snow on a road surface using real time road weather data.

- Region 3 pilot project to optimize snow removal plans
- Automated monitoring of RWIS data
- Measure storm intensity
- Real-time reporting of current road weather conditions.

ATMS System Health
Real-time device monitoring

Demonstration of new System Health Monitor

Traffic Operations Expertise
TMD support for Region projects

TMD team dedicated to collaborate with the Regions in support of key Region projects.
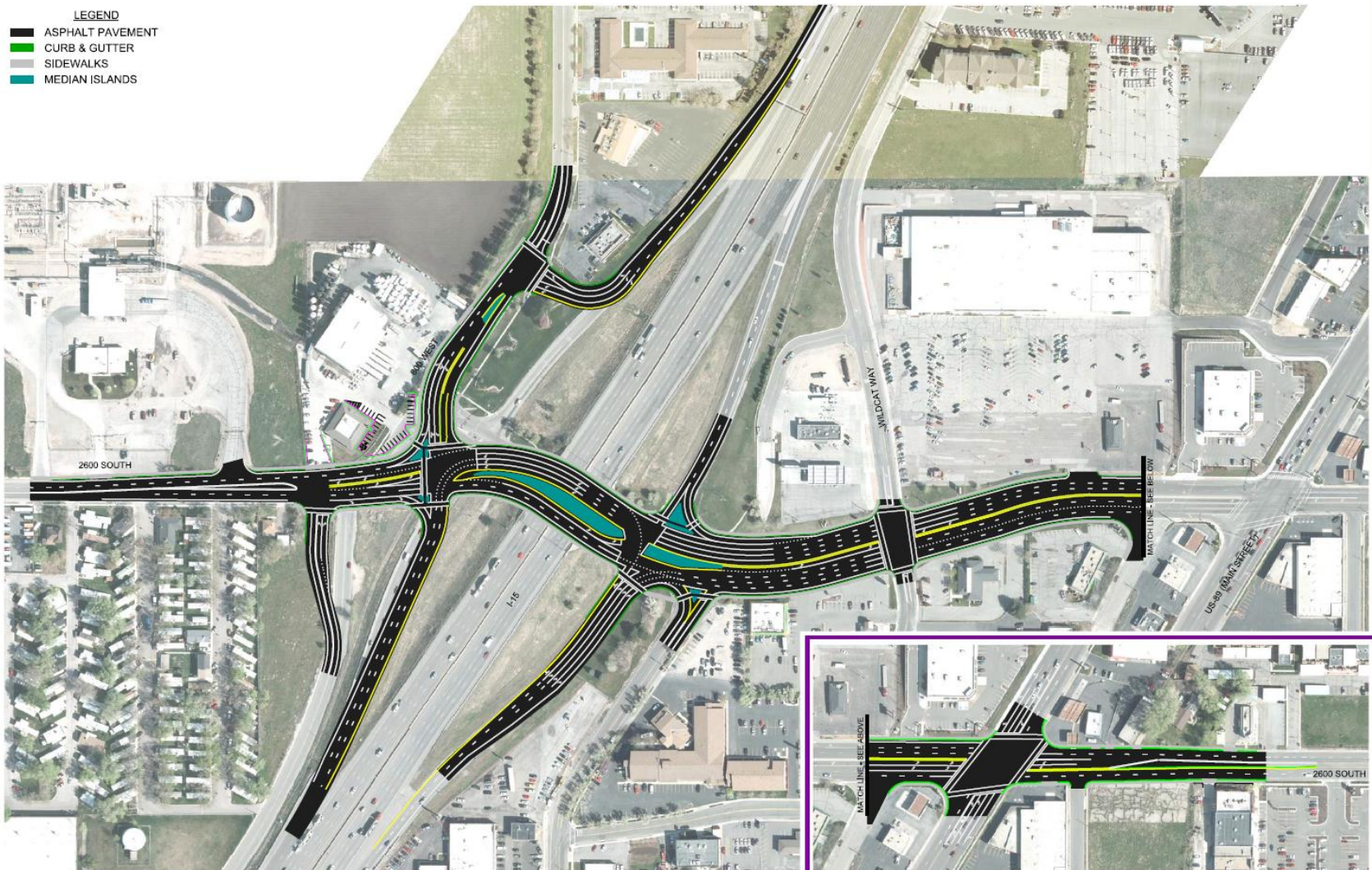
Highlights 25+ projects supported:

- I-15 South Davis Operational Improvements
- I-15, St. George Blvd Diverging Diamond Interchange
- I-15 Point Project
- St. George Blvd at Bluff St intersection
- University Parkway at State St intersection (Orem)
- University Parkway at 2230 North intersection (Provo)

Traffic Operations Expertise
TMD support for Region projects

2600 SOUTH MODIFIED DIAMOND INTERCHANGE (PRELIMINARY)

LEGEND
- ASPHALT PAVEMENT
- CURB & GUTTER
- SIDEWALKS
- MEDIAN ISLANDS

Innovation in Traffic Signals
AASHTO Technology Implementation Group

AASHTO — THE VOICE OF TRANSPORTATION
AASHTO TECHNOLOGY IMPLEMENTATION GROUP

UDOT's signal performance measures project selected
by AASHTO to promote in the TIG Program

→ UDOT's signal performance measurement program was
developed through a collaborative partnership with
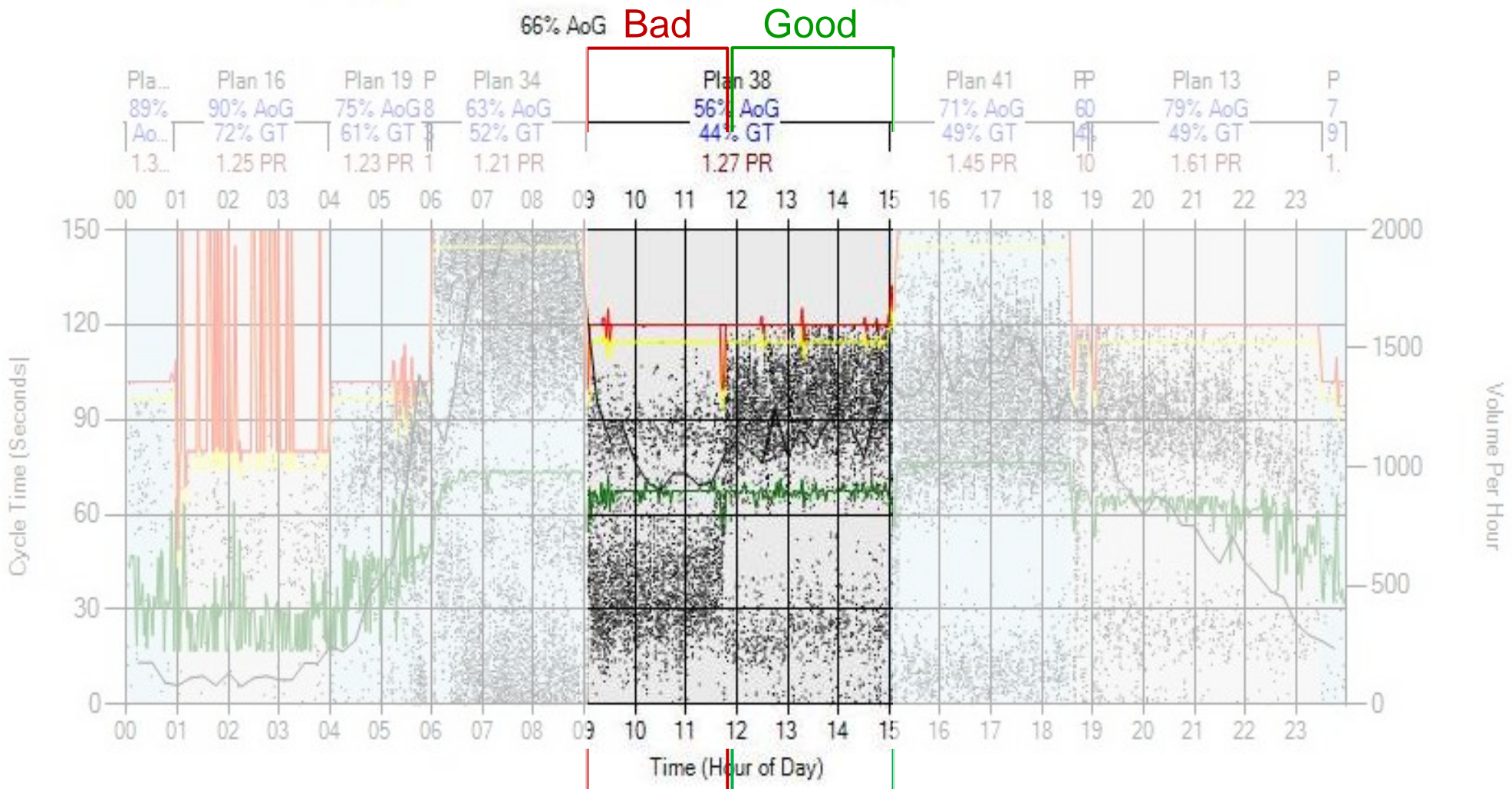Indiana DOT and Purdue University.

UDOT signals with Performance Measures:

- 2012: 50
- 2013: 716

Innovation in Traffic Signals
Real-time performance measures

Innovation in Traffic Signals
Management-level performance measurement

Demonstration of new reporting capability:

http://udottraffic.utah.gov/signalperformancemetrics/

Innovation in Traffic Signals
Corridor evaluation using INRIX travel times

- GPS-based, aggregated traffic data for major state routes

- Outcome-based, independent evaluation of signal coordination

- Pilot project was successful

Cumulative Frequency Chart
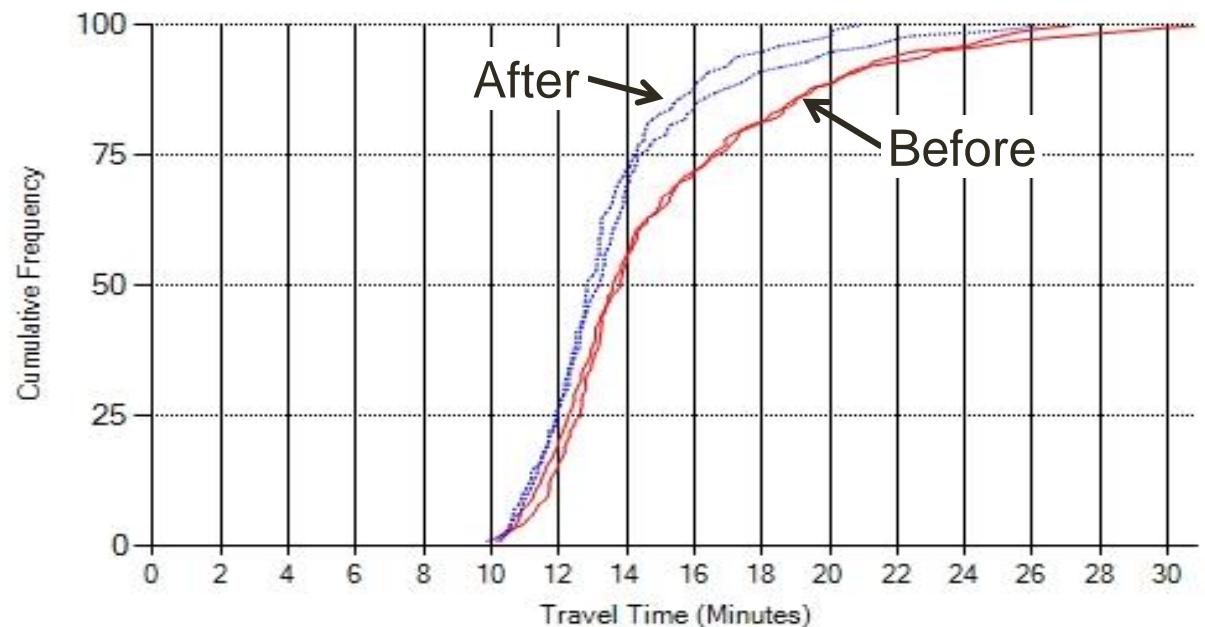**Bangerter Hwy: SR-201 to 7000 S, Southbound**

Legend:
- 3/4/2013 - 3/8/2013 from 5:00 PM to 6:00 PM
- 3/11/2013 - 3/15/2013 from 5:00 PM to 6:00 PM
- 5/6/2013 - 5/10/2013 from 5:00 PM to 6:00 PM
- 5/13/2013 - 5/17/2013 from 5:00 PM to 6:00 PM

After

Before

Y-axis: Cumulative Frequency (0, 25, 50, 75, 100)
X-axis: Travel Time (Minutes) (0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30)

9.5 miles
1 DDI
7 CFIs
4 8-phase signals

Traffic Signal Program
Preventative Maintenance

- Replace failed or failing equipment (near end of life) in an orderly manner

- Good roads cost less → Good signal operations cost less

- Recent Davis County wind event resulted in minimal damage to signal equipment compared to previous storms

2014, 2015 Priorities

- UDOT Traffic personalized alerts (this month)
- Streaming audio alerts on the UDOT Traffic app
- Dashboard for traffic congestion
- Dashboard for ATMS & signals device health
- ATMS device asset management
- Travel time monitoring in the I-15 Point Project
- Wrong-way detection on I-15
- Replace statewide traffic signal control software
- Prepare for Connected Vehicle implementation

FY 2015 Funding Request

Program	Purpose	FY 2014	FY 2015
Traffic Signal Operations	Traffic signal maintenance and operations; consultant and contractor support	$ 5.6 M (+ $ 2.0 M)	$ 5.6 M
ATMS Deployment	New devices; fiber optics; software solutions	$ 3.0 M	$ 3.0 M
ATMS Maintenance	Equipment; consultant and contractor support	$ 0.8 M	$ 0.8 M
	Total (State)	**$ 9.4 M ($ 11.4 M)**	**$ 9.4 M**

- Existing funding levels are sufficient

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